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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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 EXAMINER

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GORDON T ARNOLD  
BARDEHLE & PARTNERS  
THREE RIVERWAY  
SUITE 500  
HOUSTON TX 77056

MEE, B

 ART UNIT PAPER NUMBER

1107

DATE MAILED:

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

## Office Action Summary

Application No. 08/606,226	Applicant(s) Kyoko Ikawa, et al.
Examiner Brendan Mee	Group Art Unit 6121/PT 1107



Responsive to communication(s) filed on Jan 20, 1997

This action is FINAL.

Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

### Disposition of Claims

Claim(s) 1-5, 7-16, 18-23, and 25-33 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

Claim(s) \_\_\_\_\_ is/are allowed.

Claim(s) 1-5, 7-16, 18-23, and 25-33 is/are rejected.

Claim(s) \_\_\_\_\_ is/are objected to.

Claims \_\_\_\_\_ are subject to restriction or election requirement.

### Application Papers

See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

The proposed drawing correction, filed on \_\_\_\_\_ is  approved  disapproved.

The specification is objected to by the Examiner.

The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. § 119

Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

All  Some\*  None of the CERTIFIED copies of the priority documents have been received.

received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

### Attachment(s)

Notice of References Cited, PTO-892

Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_

Interview Summary, PTO-413

Notice of Draftsperson's Patent Drawing Review, PTO-948

Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. Claims 1-34 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. Claim 1 as amended recites “a charge/discharge unit connected to the power system.” What exactly is the “power system”? Looking at Fig. 1, charge/discharge unit (2) is connected to the power supply on one side (which is what was originally claimed) and to loads and other elements of the storage system on the other (which may or may not be what is claimed now). Construing either of these as connection to the “power system” has its own problems. For example, if power system means power supply, then claim 19 recites feeding residual electrical power of the secondary battery back to the power supply! If power system means loads or other elements of the storage system, then the charge/discharge unit is “connected to” a system of which the unit itself is already a part, and that “connection” does not mean anything.

b. In claim 4, “said charge/discharge units” lacks antecedent basis because only “a charge/discharge unit” is recited in the base claim.

c. In claim 19, “the power source” at line 5 lacks antecedent basis.

d. In claim 20, “strage” should be --storage--. Further in claim 20, “The residual electric power” lacks antecedent basis. Further in claim 20, there is no operative relationship

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described between the secondary battery and the charger. Further in claim 20, it is not clear that “a plurality of loads” which is recited more than once, is the same plurality of loads.

- e. In claim 33, “the charge capacity” lacks antecedent basis and “has not been completed” is ambiguous since it implies some unknown endpoint for the discharging.
- f. In all of the claims, charge/discharge units is ambiguous, as set forth in the previous Office action.

***Claim Rejections - 35 USC § 102/103***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 1-5, 19 and 34 rejected under 35 U.S.C. 102(b) as being anticipated by or in the alternative as obvious over US 5,254,929 (Yang). Yang discloses: secondary battery (103) connected to loads (105-1...n); cyclic timing control device (107) which "senses residual electrical energy" stored in battery 103 (see col 2, lines 24-25, col. 3, lines 19-20); charge discharge unit (rectifier 102) connected to both power supply (101) and power system (loads 105-1...n). The cyclic timing control device (107) comprises a controller.

a. Applicant argues that the cyclic timing control device (107) is not a detecting device which provides "information" which "comprises measured values for determining residual electrical power stored in the secondary battery." To the contrary, the cyclic timing control device is a detecting device because it measures the amount of time which passes during which the battery is on, and on that basis determines the residual electric power left in the battery.

b. If the Yang timer (107) were deemed not to be a detector, then it would have been obvious to one of ordinary skill in the art to substitute for the timer a means for determining residual capacity of the battery based on some measured physical property, because Yang already describes that element in terms of sensing the residual energy of the battery, and one of ordinary skill in the art knows that residual capacity of a battery can be deduced from measured parameters such as output voltage.

c. Claim 3 requires a plurality of loads and a plurality of power storage units. In Yang element (105-1...n) can be either power storage units or loads as described at col. 2, lines

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35-36. Accordingly, it would have been obvious that some of them could be loads and some could be power storage units (batteries).

d. As amended all of the claims now recite a secondary battery load as well as a plurality of loads. Given the broadest reasonable interpretation of the claims in light of the specification, the secondary battery load could also be among the plurality of loads (i.e. a main power supply and a secondary battery backup for one set of loads). However, in view of this amendment new grounds of rejection are applied against the claims which clearly show an auxiliary battery load distinct from a main load.

Applicants' amendment to the claims necessitates the following NEW GROUNDS OF REJECTION:

5. Claims 1, 2, 19-33, and 34, rejected under 35 U.S.C. 102(e) as being anticipated by US 5,334,926 (Imaizumi). Imaizumi discloses a power system for a vehicle. The system comprises: secondary battery (7) connected to secondary battery loads (50), voltage detecting device (15) for determining residual power of battery (7), voltage converter (4) which is a charge unit for secondary battery (7) connected to the power system for the vehicle and to the secondary battery (7), controller (8) connected to converter (4) and signal (10, 11) which sends a signal related to the condition of battery (7) to the controller to control the operation of converter (4). (See col. 2, line 30 - col. 3, line 40).

a. With regard to method claims 19-33, the method steps are set forth in FIG. 6 and at col. 4, line 62 - col. 5 line 55. The method comprises discharging secondary battery to

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resistance 40 to increase the load current and decrease the secondary battery terminal voltage before charging commences (see especially col. 5, line 8-32).

6. Claims 1-5, 7-11 rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,254,929 (Yang) in view of 4,583,034 (Martin). Claim 7 introduces a computer which calculates residual charge on a battery. Martin discloses a computer which controls a battery charger which calculates residual charge on a battery (see e.g. claims 1 and 33), it would have been obvious to one of ordinary skill in the art to incorporate computer controller (as in Martin) into the Yang device to control the charging of secondary battery (103), because Yang discloses that charging the secondary battery is done based on sensed residual capacity of the battery, and computer control of this function is moreover typical in the art of charging batteries.

7. Claims 12-16 and 18 rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,481,175 (Qualich) in view of US 5,530,335. Referring to FIG. 2 for example, Qualich shows auxiliary battery (107) and auxiliary load (109), which correspond to the claimed secondary battery and secondary battery load. Qualich shows a charge unit (101) which corresponds with the claimed charge/discharge unit, which is connected to both the auxiliary battery and plurality of loads (105). The charging unit is also connected to a power system. The disclosed system has a detector for determining the voltage across the auxiliary battery (227) (see col. 3, lines 33-37). Microcontroller (201) is a computer which controls charging based on terminal voltage across the auxiliary battery (227) (which corresponds to residual electrical power stored there) and auxiliary battery charge current (121) (which corresponds to the amount of power charged into the

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auxiliary battery).(see col. 4, lines 15-20 and 40-50). Qualich does not specifically show and analog/digital converter to provide signals to the processor, but Decker does show that feature (element 32 in FIG.1) and it would have been obvious to convert analog measurements to digital signals because processors typically require digital input.

### **Response to Arguments**

With respect to the rejection of claims 1-6 under 35 U.S.C. 102, applicant argues first that the cyclic timing control device (107) is not a detecting device. As noted above, the cyclic timing control device is a detecting device because it measures the amount of time which passes during which the battery is on, and on that basis determines the residual electric power left in the battery and then charges the battery accordingly. Moreover, devices which calculate residual electric power of a battery from a measured parameter are notoriously well known and shown in the art of record.

Applicant further argues that the charger of Yang is not a charge/discharge device unit. The phrase “charge/discharge” forms the basis of a rejection under 35 USC 112, set forth in the first office action. Certainly nothing in that phrase requires the “ability to select a discharge load,” nor is the phrase defined that way in the specification. If the secondary battery is connected to its load it is discharging. If it is connected to the charger it is charging. A controller determines which it is connected to. Together, these elements comprise a charge/discharge unit.

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Applicant's arguments with respect to the Henderson and Chung references have been considered but are moot in view of the new ground(s) of rejection.

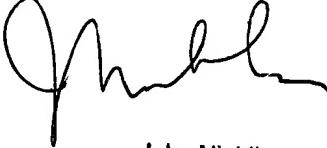
Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for response to this final action is set to expire THREE MONTHS from the date of this action. In the event a first response is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event will the statutory period for response expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brendan Mee, whose telephone number is (703) 308-3331. In the event that the examiner cannot be reached, the Supervisor of Art Unit 1107, John Niebling, may be reached at (703) 308-3325. A message may be left with the Group 1100 receptionist at (703) 308-0661. The Group 1100 fax number is (703) 305-3599.

Brendan Mee  
June 24, 1997



John Niebling  
Supervisory Patent Examiner  
Patent Examining Group 110